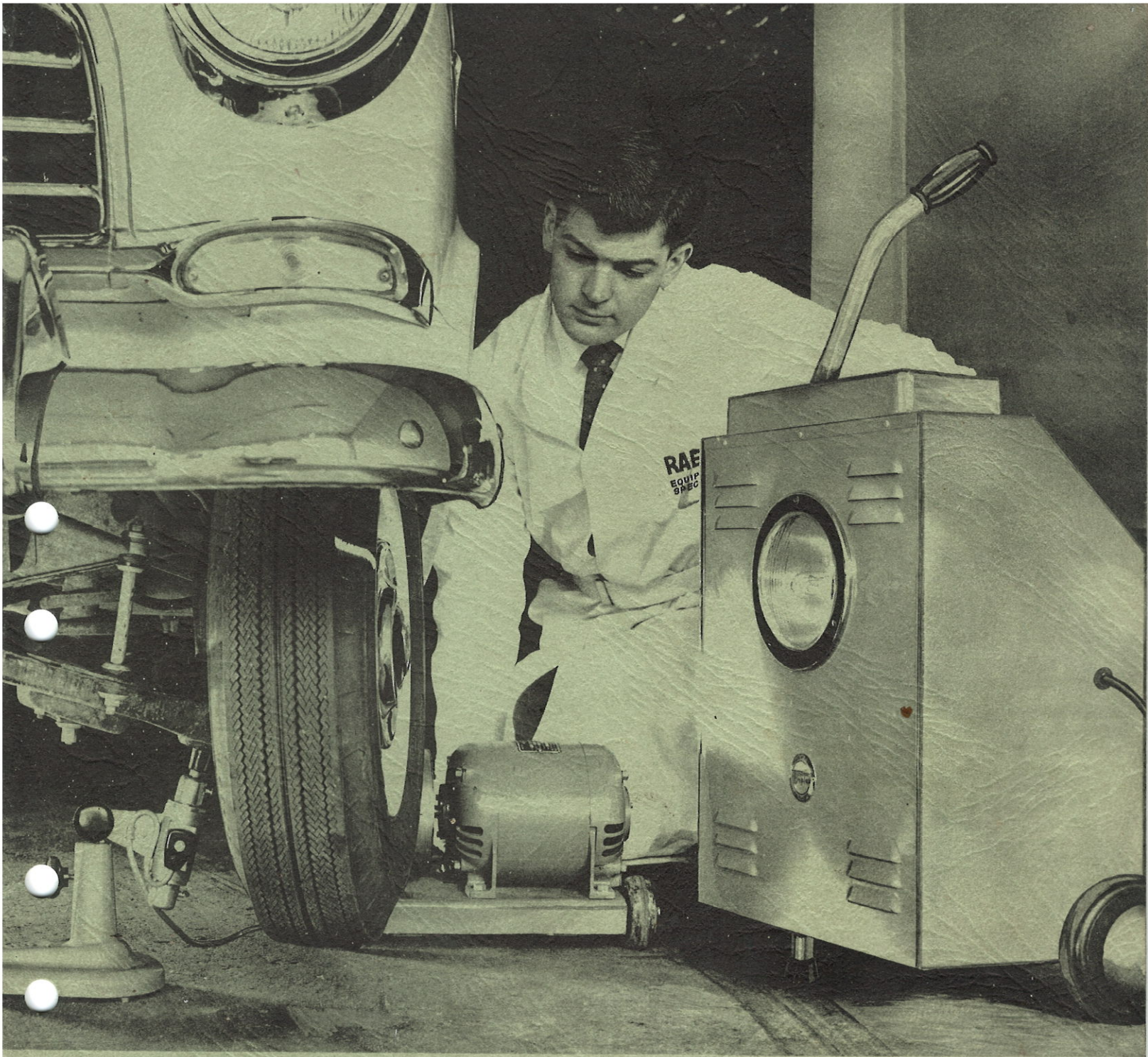


OPERATING INSTRUCTIONS

Replex ELECTRONIC WHEEL BALANCER

INSTALLATION OF UNIT

When unpacking the Replex Electronic Wheel Balancer from its crate make these four simple checks to see if everything is in order.

(1) Fit 3 pin plug of balancer flex into a 230/250 volt A.C. power point and switch on. The red indicator light immediately below the "Unbalance" meter should glow.

(2) Insert the Pick–Up unit cable plug into its socket on machine. When the spring loaded plunger of the pick–up head is caused to move up and down by tapping its rubber capped top, the "Unbalance" meter should give a reading.

(3) Now press the "light" switch, on the cabinet and the light should give a sharp flash for each downward stroke of the pick–up.

(4) Fit the 3 pin plug at end of Motor Cable into the 3 pin socket beside the stroboscopic lamp lens. When the "motor" switch knob is momentarily pressed the motor should quickly gather speed. Do not run unloaded motor at high speed.

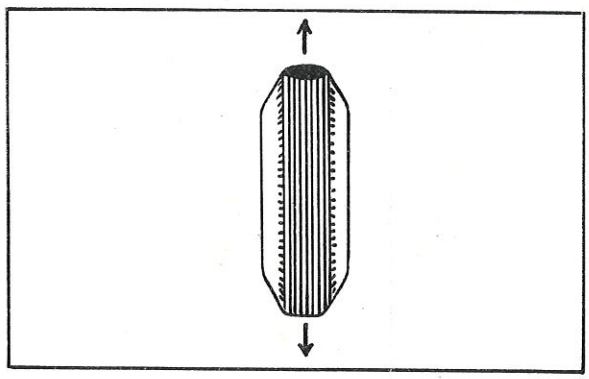
If everything operates as above the unit is ready for operation. If, by chance, the unit has been damaged in transit contact the distributor from whom the equipment was purchased. He will arrange for servicing.

CARE OF MACHINE

Your Replex Electronic Balancer is a machine designed to give a very high degree of accuracy in wheel balancing. To achieve this degree of accuracy we have used a sensitive electronic circuit and amplifier valves and for long life and reliability it is essential that the cabinet unit and pick–up head be treated carefully and not subjected to rough treatment or heavy shocks.

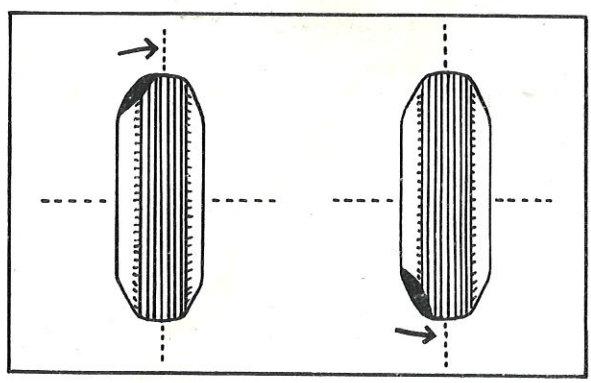
The stroboscopic flash tube operates at a high voltage (1500V). Except for replacing flash tube do not remove the front lens. The flash tube is connected to a 1500 volt condenser, mounted underneath the chassis, which will retain its charge of high voltages for several days after the unit has been switched off. This condenser must be discharged before any work is carried out on the chassis or flash lamp assembly.

TWO TYPES OF UNBALANCE



KINETIC UNBALANCE

The most common out of balance in wheels is caused by heavy spots on the tread of the tyre. When the wheel rotates this weight tends to fling the wheel up and down, the force of this flinging multiplies with increase in speed.



DYNAMIC UNBALANCE

The second and rarer type of unbalance is called dynamic unbalance. This is caused by a heavy spot on the side wall of the tyre and as the wheel rotates this weight causes the wheel to wobble (Refer page 7)

POINTERS TO SPEEDY BALANCING

1. Before commencing to balance wheels make certain that there are no large pieces of dirt or mud adhering to the inside or outside of the wheel.

2. Sometimes a wheel is encountered, where no attention, as regards balance, is necessary, i.e. no meter reading – no vibration.

3. Do not attempt to touch spinning wheel. It may appear stationary when lamp of machine is in operation.

4. If a tyre has more than 1/8" radial or lateral runout the cause, if possible, should be corrected before balancing. It may be due to improperly mounted tyre or bent wheel. A tyre with excessive runout will be difficult to balance as well as causing tyre wear and bad riding.

5. When balancing kinetically divide weight equally between inside and outside rims if weight exceeds 3 ozs.

6. Remember to place pick–up as near as possible to wheel being balanced.

7. Make certain that pick–up cord and motor flex are well clear of spinning wheel. If either catch in rotating tyre serious damage may result to pick–up or motor.

8. When a front wheel is difficult to balance, get the best possible balance and then eliminate any dynamic unbalance. It will then be found easy to complete the kinetic balancing.

9. A good operator will endeavour to achieve balance using the smallest possible number of weights.

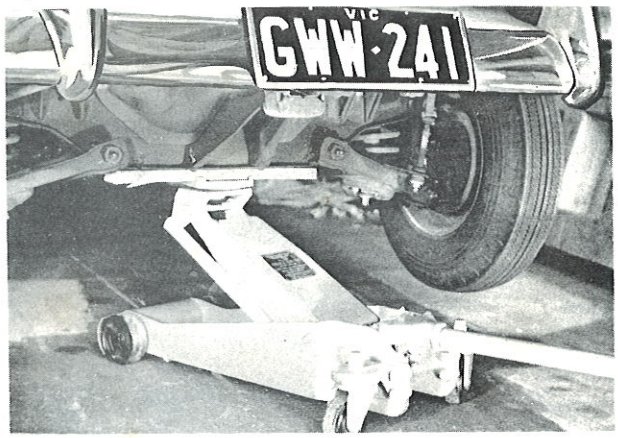
10. When the overhanging design of mudguards prevents operator from seeing full wheel it may be necessary to use two distinctively different reference marks 180 degrees apart, in case one is hidden from view. Suggest making one the usual chalk line and the other a chalk cross.

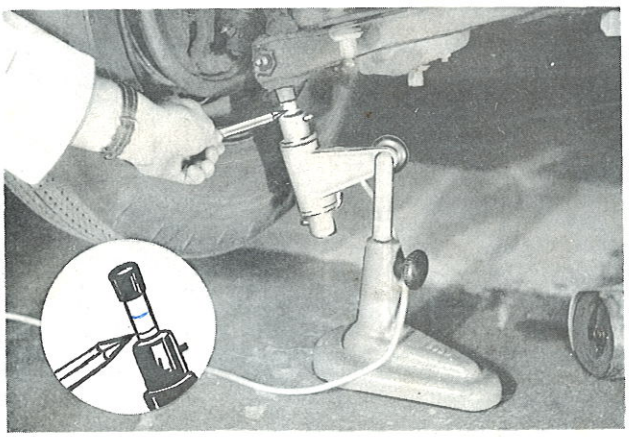
11. The position or "time" of reference mark should be noted only during the peak meter reading occurring at low speed which generally approximates 35 m.p.h. The high speed "peak" will not give accurate results, until the lower speed, out of balance, is corrected.

FOR MAXIMUM EFFICIENCY ALWAYS USE REPLEX MATCHED WHEEL BALANCE WEIGHTS

KINETIC BALANCING PROCEDURE

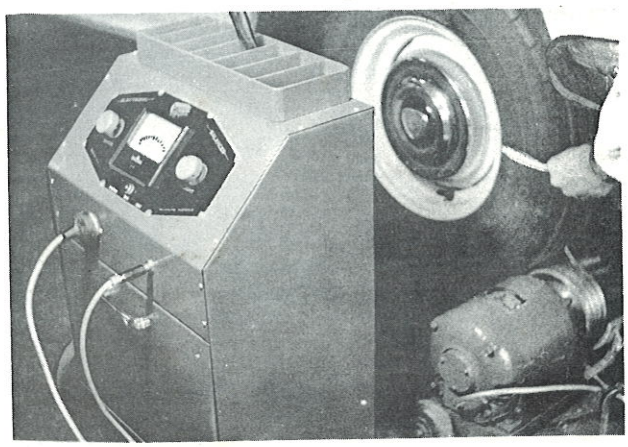
Place jack under centre of car and raise the wheels clear of the floor. A rubber block is supplied with the Balancer for use with beam type front axles and rear axles.

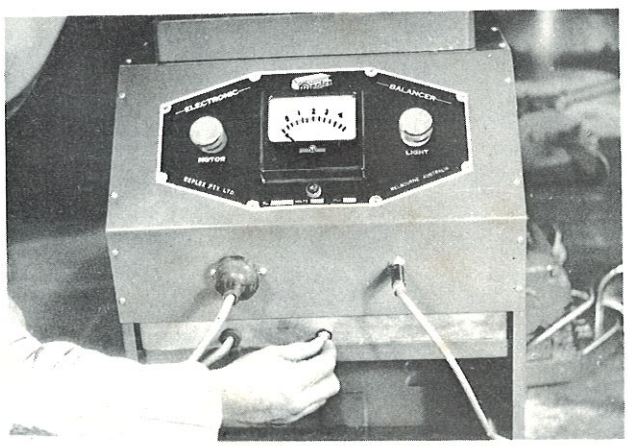




Place pick–up head under suspension as close to king pin support as possible. Position plunger so that groove on it is level with the top of body as shown.

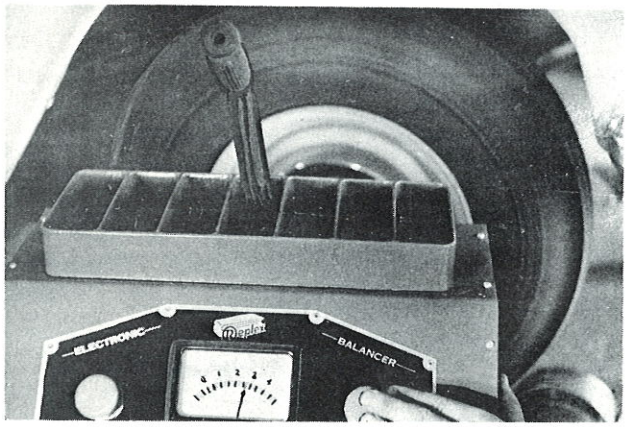
Place motor pulley against tyre, wheel the cabinet forward to within 18'' of the wheel, plug in both the pick–up lead and the 3 pin motor plug and switch on main switch. Place chalk mark anywhere on the tyre wall.





Allow the Balancer to warm up for a minute or so and then if necessary adjust meter to zero with the rheostat control inside cabinet door.

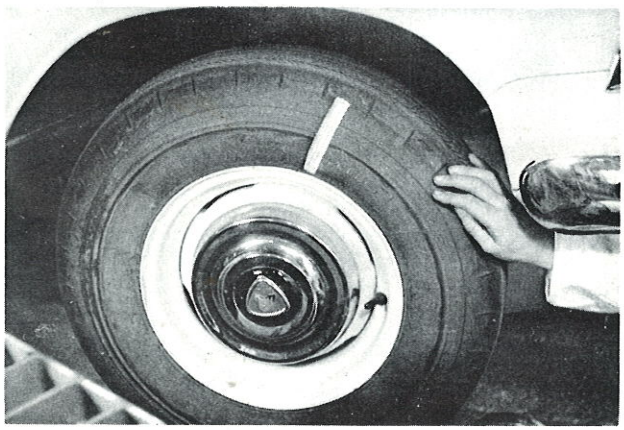
N.B. Balancing can be carried out with the wheel being rotated in either direction.



Having set up the balancer as above to check kinetic unbalance we now press the motor button on the cabinet and the wheel begins to rotate.

If the wheel is out of balance the meter needle will rise on the scale. As the wheel is spun faster the meter needle may then fall, but will rise again as the wheel speed further increases.

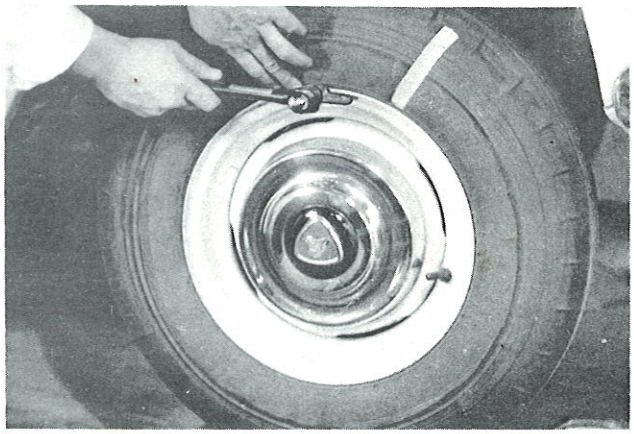
Balance for the first meter reading (at a speed which approximates 35 m.p.h.) When the meter reaches the first peak release the motor button and pull away the motor. Just before the needle begins to drop press the light button and note the position of the chalk mark.



Under the light flash the wheel appears stationary. Due to the design of the balancer, when the light flashes, an out of balance wheel always has its heaviest point at the bottom or 6 O'clock position.

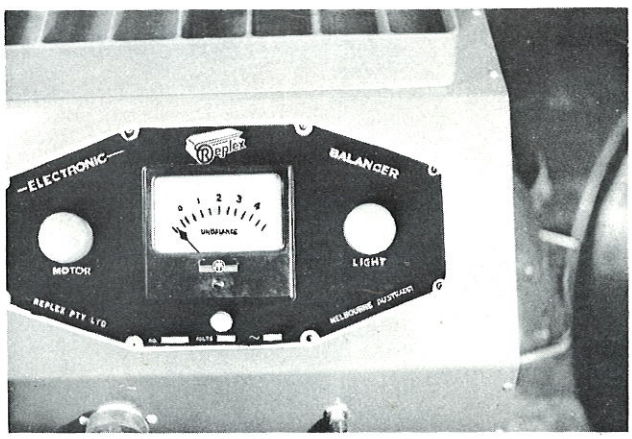
Stop the wheel and re–position it to the point it appeared under the light.

ONLY REPLEX WHEEL BALANCE WEIGHTS ARE MATCHED FOR QUICKER, NEATER AND MOST ACCURATE FITTING



The weight is added to the top of the wheel at the 12 O'clock position. The amount of weight required is judged from the meter reading and does not show number of ounces, this number is only for reference. Should there be more than 3 ounces of weight required take 2 weights each half the amount required and fit one inside and the other outside the wheel rim.

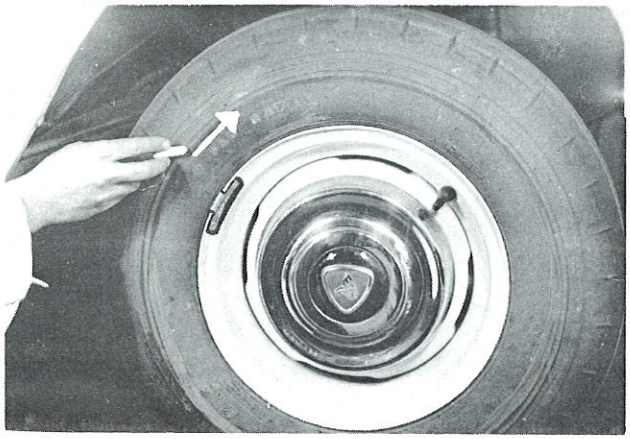
Remove the chalk mark from the tyre. Now use the weight to note the position of reference for further checking.

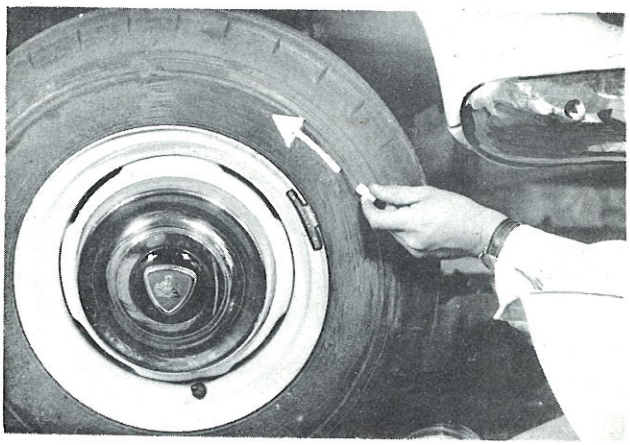


Again press motor to the tyre and spin the wheel. If the meter reads in the safe zone no further work is required. If the meter reads unbalance spin the wheel until peak reading then release motor button and pull the motor away from the wheel.

If the weight appears at the bottom of the wheel under the light flash the weight is too heavy. If at the 12 O'clock position it is too light alter weight accordingly. Photograph shows "too light" position.

Should the weight appear anywhere on the side of the wheel as illustrated the weight should be moved upwards and the wheel re–tested. A distance of 2" to 3" at a time is usual. However, a movement of 1" may be all that is necessary in the case of some vehicles.



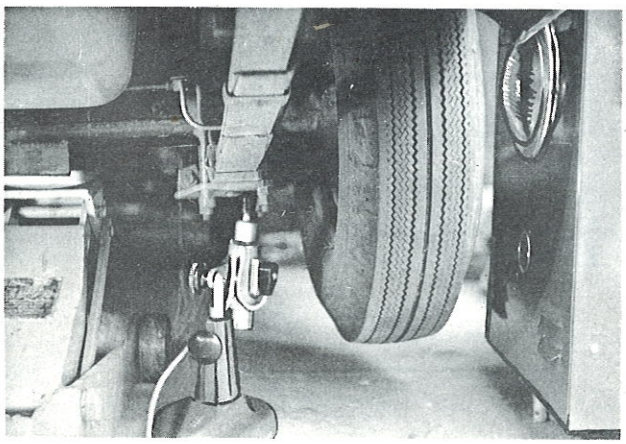


If the weight had appeared on the forward side of the wheel as shown in this illustration it would be moved upwards towards 12 O'clock as in previous instance. See arrow.

NOTE:
The latter three instructions dealing with the position of the weight are only acted upon when the meter continues to show unbalance after fitting weights.

PROCEDURE FOR REAR WHEEL KINETIC BALANCING

Jack up rear axle as shown. Rubber block between the jack and rear axle is supplied with each machine. Position pick–up head as close to the wheel as possible.



The car engine is used to drive rear wheels. Rear wheel balancing is equally as important as front wheel balancing although the out of balance vibrations are not so easy to detect as with the front wheel. This is because the rear axle and springs are much more rigid than the front assembly. Remember that with one wheel on ground the other wheel is spinning at twice the road speed shown on the car speedo. Do not run speedo above 50 m.p.h. Cars with independant rear suspension are done in the same manner as are front wheel drive cars.

PROCEDURE:

(1) Have an assistant start the car engine, shift into top gear, gradually let in the clutch, slowly accelerate.

(2) Watch meter and at its highest reading (possibly about 30 m.p.h. on car speedo) press "light" knob noting position or "time" of reference mark which will appear to be stationary as before. Have your assistant shift to neutral and stop wheel.

(3) Rotate the wheel by hand until the reference mark is in the same position or "time" as it appeared on peak reading.

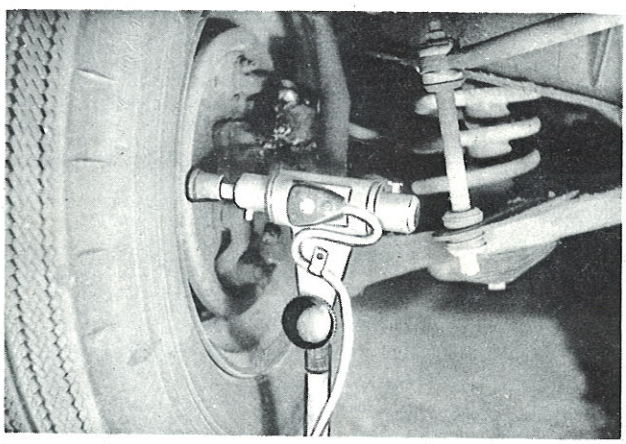
(4) Apply weight to topmost point of wheel (12 O'clock). The approximate amount of weight required is shown hereunder: –

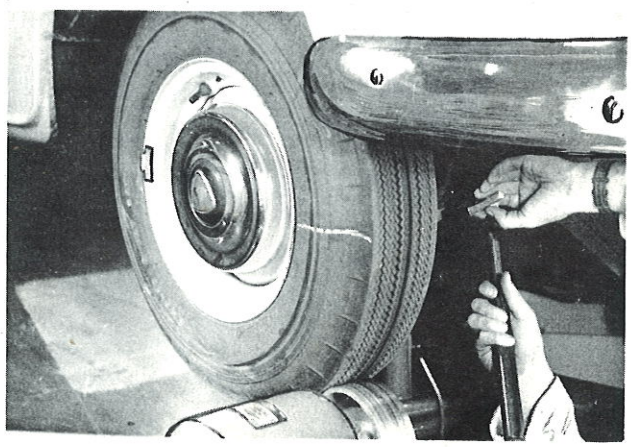
Meter Reading	Coil Spring	Leaf Spring
Up to 1	1 oz.	2 ozs.
2	2 ozs.	4 ozs.
3	3 ozs.	6 ozs.
Over 3	4 ozs. or more	6 ozs. or more

(5) Re–spin wheel with car engine and meter reading will be in "safe" area if balance is correct.

(6) If further attention is necessary repeat as for front wheel procedure.

PROCEDURE FOR CORRECTING DYNAMIC UNBALANCE





When Kinetic unbalance has been rectified the pick–up head is placed in a horizontal position against the brake backing plate and at or near the level of the stub axle.

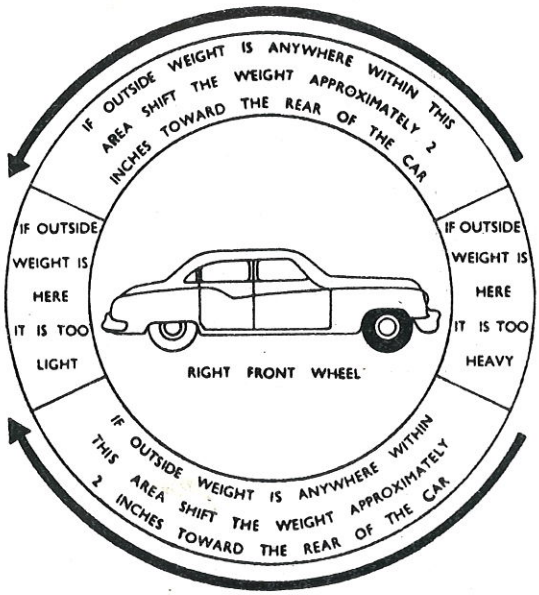
A Replex steering wheel holder can be used to prevent the wheel turning away from the pick–up head.

Place a chalk mark on the tyre and spin the wheel, flash the light at the peak meter reading as before. Note the position of the wheel then stop it and move it into this position. Two weights are fitted, one at the rear of the wheel on outside and the other weight at the front of the wheel on the inside.

The weights must be equal size. (NOTE: If the balance weight which has been used to correct Kinetic Unbalance appears at the outside front of the wheel, moving it to the inside may correct the dynamic unbalance.)

If outside weight is shifted in position or changed in size the same must be done with the inside weight. (They must be of equal weight and directly opposite each other).

This illustration shows which way to move the weight if they have not completely corrected the dynamic unbalance. Following the instructions on this diagram should obtain a meter reading in the safe zone.


IF OUTSIDE WEIGHT IS ANYWHERE WITHIN THIS AREA SHIFT THE WEIGHT APPROXIMATELY 2 INCHES TOWARD THE REAR OF THE CAR
IF OUTSIDE WEIGHT IS HERE IT IS TOO LIGHT
IF OUTSIDE WEIGHT IS HERE IT IS TOO HEAVY
RIGHT FRONT WHEEL
IF OUTSIDE WEIGHT IS ANYWHERE WITHIN THIS AREA SHIFT THE WEIGHT APPROXIMATELY 2 INCHES TOWARD THE REAR OF THE CAR

REPLEX MATCHED WHEEL BALANCE WEIGHTS WITH PATENTED CLIP FITS ALL MODERN RIMS, TRIM RIMS AND ALSO TUBELESS TYRES

REPLEX PTY. LTD.
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BRUNSWICK, VICTORIA, AUSTRALIA